Schiavinatoite $(Nb, Ta)BO_4$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As portions of prismatic tetragonal dipyramidal crystals, intergrown with béhierite, to 2 cm.

Physical Properties: Hardness = ∼8 D(meas.) = n.d. D(calc.) = 6.548

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Uniaxial (+). $n = 2.30(5)$, birefringent. ω = n.d. ϵ = n.d.

Cell Data: *Space Group:* $I4_1/amd$. $a = 6.219(5)$ $c = 5.487(5)$ Z = 4

X-ray Powder Pattern: Antsongombato, Madagascar; calculated pattern, very close to béhierite.
4.115 (100), 3.110 (84), 2.328 (49), 1.598 (42), 2.481 (36), 1.939 (29), 1.646 (25)

Chemistry:

	(1)	(2)
B_2O_3	[16.60]	16.44
Nb_2O_5	33.08	31.38
Ta_2O_5	50.37	52.18
Total	[100.05]	100.00

(1) Antsongombato, Madagascar; by electron microprobe, average of 16 analyses, B_2O_3 calculated from stoichiometry; corresponds to $(Nb_{0.52}Ta_{0.48})_{\Sigma=1.00}BO_4$. (2) $(Nb, Ta)BO_4$ with Nb:Ta = 1:1.

Occurrence: Very rare in miarolitic cavities in a pegmatite dike.

Association: Béhierite, rhodizite, elbaite–liddicoatite, spodumene, pollucite, danburite, apatite, quartz, feldspar.

Distribution: From Antsongombato, south of Betafo, Madagascar.

Name: To honor Professor Guiseppe Schiavinato (1915–1996), Italian mineralogist, who supported the advancement of mineralogy in Italy.

Type Material: City Museum of Natural History, Milan, Italy, M31137.

References: (1) Demartin, F., V. Diella, C.M. Gramaccioli, and F. Pezzotta (2001) Schiavinatoite, $(Nb, Tb)BO_4$, the Nb analogue of behierite. Eur. J. Mineral., 13, 159–165.